ISSN: 0888-0018

Pediatric Hematology and Oncology

Volume 19
2002

Pediatric Hematology and Oncology

EDITOR-IN-CHIEF

L. Parker
Sir James Spence Institute of Child Health
Newcastle University, RV1
Queen Victoria Road
Newcastle upon Tyne, NE1 4LP, UK
Louise.Parker@ncl.ac.uk

ASSOCIATE EDITOR

Mark L. Bernstein
Montreal, Canada

FOUNDER AND EDITOR EMERITUS

Joergen Cohn
Aeroeskoebing, Denmark

EDITORIAL BOARD

S. H. Advani
Bombay, India

Y. Barak
Rehovot, Israel

S. M. Blaney
Houston, Texas, USA

J. Blatt
Chapel Hill,
North Carolina, USA

M. Büyükpamaktiu
Ankara, Turkey

J. M. Chessells
London, UK

I. J. Cohen
Tel-Aviv, Israel

S. Cotterill
Newcastle upon Tyne, UK

Y. L. Danon
Tel-Aviv, Israel

M. David
Montreal,
Canada

H. Gadner
Vienna, Austria

B. E. S. Gibson
Glasgow,
Scotland

I. M. Hann
London, UK

H. Henze
Berlin, Germany

L. Holmberg
Lund, Sweden

H. Holzel
London, UK

M. Kalmanti
Heraklion,
Crete, Greece

T. Leblanc
Paris, France

J. S. Lilleyman
London, UK

M. Malone
London, UK

Patricia A. McKinney
Leeds, UK

Mark S. Pearce
Lyon, France

T. Phillip
Lyon, France

Judy Powell
Birmingham, UK

Julie A. Ross
Minneapolis,
Minnesota, USA

T. Sawada
Kyoto, Japan

D. Schuler
Budapest, Hungary

G. Tchernia
Paris, France

R. S. Weening
Amsterdam, The Netherlands

F. Wesenberg
Oslo, Norway

K. Yamamoto
Saitama, Japan

Abstracted and/or Indexed in: BIOBASE, BIOSIS Preview, CAB Abstracts, CSA Environmental Sciences & Pollution Management Database, CSA Safety & Risk Assessment Abstracts, Current Contents/Clinical Medicine, EMBASE, Medical Documentation Service MEDLARS, Oncology Information Service, Research Alert, SciSearch, and Science Citation Index.

Subscription Information: **Pediatric Hematology and Oncology** is published monthly (except February, May, August, and November), for a total of eight issues per year, by Taylor & Francis, Inc., 325 Chestnut Street, Philadelphia, PA 1906 for Taylor & Francis Ltd., 11 New Fetter Lane, London EC4P 4EE, UK.

Annual Subscription, Volume 19, 2002 Print ISSN 0888-0018 Institutional: US $752, UK £456. Individual: US $331, UK £201. A subscription to the print edition includes free access for any number of concurrent users across a local area network to the online edition. (Online ISSN 1521-0669). Institutional subscribers may choose a print subscription, an online subscription, or both. For a complete guide to Taylor & Francis Group's journal and book publishing programs, online subscriptions, and details on advertising in our journals, visit our website: **http://www.taylorandfrancis.com**.

Production, Advertising, and Subscription Office: Taylor & Francis, 325 Chestnut Street, Philadelphia, PA 19106. Tel - 215-625-8900, fax -215-625-2940. **Production Editor:** Susan A. Sweeney.

Periodicals postage paid at Jamaica NY 11431. US Postmaster: Send address changes to **Pediatric Hematology and Oncology**, Publications Expediting, Inc., 200 Meacham Avenue, Elmont, NY 11003.

Dollar rates apply to subscribers in all countries except the UK and the Republic of Ireland where the sterling price applies. All subscriptions are payable in advance and all rates include postage. Subscriptions are entered on an annual basis; i.e., January to December. Payment may be made by sterling check, dollar check, international money order, National Giro, or credit card (Amex, Visa, Mastercard/Access).

Orders originating in the following territories should be sent directly to: **India:** Universal Subscription Agency Pvt. Ltd, 101–102 Community Centre, Malviya Nagar Extn, Post Bag No. 8, Saket, New Delhi 110017. **Japan:** Kinokuniya Company Ltd, Journal Department, PO Box 55, Chitose, Tokyo 156. **USA, Canada, and Mexico:** Taylor & Francis Inc., 325 Chestnut Street, Philadelphia, PA 19106. **UK and all other territories:** Taylor & Francis Ltd, Rankine Rd., Basingstoke, Hampshire RG24 8PR.

Copyright © 2002 Taylor & Francis. All rights reserved. No part of this publication may be reproduced, stored, transmitted, or disseminated in any form or by any means without prior written permission from Taylor & Francis Inc. Taylor & Francis Inc. grants authorization for individuals to photocopy copyright material for private research use on the sole basis that requests for such use are referred directly to the requester's local Reproduction Rights Organization (RRO), such as the Copyright Clearance Center in the USA or the Copyright Licensing Agency in the UK. This authorization does not extend to any other kind of copying by any means, in any form, and for any purpose other than private research use. The publisher assumes no responsibility for any statements of fact or opinion expressed in the published papers or advertisements.

The paper in this publication meets the requirements of the ANSI Standard Z39.48-1984 (Permanence of Paper).

PEDIATRIC HEMATOLOGY AND ONCOLOGY

Volume 19 Tables of Contents

Volume 19, Issue 1

Articles

Serum Carnitine Levels of Pediatric Cancer Patients 1
Nilgun Yaris, Canan Akyüz, Turgay Coşkun, and Münevver Büyükpamukçu

Disseminated Malignant Ectomesenchymoma (MEM): Case Report and Review of the Literature 9
H. L. Müller, A. Marx, M. Trusen, P. Schneider, and J. Kühl

Overall and Event-Free Survivals for Acute Lymphoblastic Leukemia in Children at a Single Institution in Taiwan 19
Hsi-Che Liu, Shu-Huey Chen, Kou-Hwa Chang, Le-Chiao Chiang, Chin-Yueh Liu, Huei-Lan Chang, Li-Li Tsai, and Der-Cherng Liang

Therapeutic Monitoring of Busulfan in Pediatric Bone Marrow Transplantation 31
N. Krivoy, E. Hoffer, A. Tabak, R. Elhasid, M. Weyl Ben Arush, J. Stein, I. Yaniv, and J. M. Rowe

Brief Reports

Chronic Hemolytic Anemia Associated with Glucose 6-Phosphate Dehydrogenase (Guadalajara) 1159 C → T (387 ARG → CYS) Deficiency Associated with Gilbert Syndrome in a Turkish Patient 39
R. Öner, C. Acar, C. Öner, İ. Yenicesu, F. Gümrük, A. Gürgey, and C. Altay

Childhood Non-Hodgkin Lymphoma Presenting as Hemophagocytic Syndrome 45
Julie Blatt, Brent Weston, Tom Belhorn, Harvey Hamrick, and Diane Maia

Immunological Status of Thalassemia Syndrome 51
Üstün Ezer, Ferda Gülderen, Vildan K. Çulha, Nursen Akgül, and Özlem Gürbüz

Recurrent Arterial Thrombosis in a Child: Primary Antiphospholipid Antibody Syndrome 59
Zümrüt Uysal, Figen Doğu, A. Emin Kürekçi, Vildan Koşan Çulha, Gülhis Deda, Mesiha Ekim, Nejat Akar, Mehmet Ertem, Aydan İkincioğulları, Emel Babacan, and Sevgi Gözdaşoğlu

Thrombocytopenia and Emperipolesis in a Patient with Hepatitis a Infection 67
Zekai Avci, Tuba Turul, Ferhat Çatal, Şeref Olgar, Ali Baykan, Özlem Teksam, and Aytemiz Gürgey

Book Review

Platelet Therapy: Current Status and Future Trends 71
R. Skinner

Volume 19, Issue 2

Editorial

Prognostic Indicators in Cancer: A New Approach 73
Louise Parker

Annotation

Pneumonocystis Pneumonia 77
Charles C. Pratt

Articles

Neuroblastoma: A Single Institution's Experience with 128 Children and an Evaluation of Clinical and Biological Prognostic Factors 79
Loretta Lau

Hematological Reference Ranges in Black Very Low Birth Weight Infants 91
V. P. Stancheva, G. G. Sherman, M. Avent, B. J. Cory, D. E. Ballot, and P. A. Cooper

Reduction in Transfusion Requirements with Early Epoetin Alfa Treatment in Pediatric Patients with Solid Tumors: A Case-Control Study 95
Martina Kronberger, Gustav Fischmeister, Ulrike Poetschger, Helmut Gadner, and Andreas Zoubek

Patterns of Abdominal Relapse and Role of Sonography in Wilms Tumor 107
Najat C. Daw, William M. Kauffman, Sara M. Bodner, Charles B. Pratt, and Fredric A. Hoffer

Short Communications

p53 Gene Mutations in Pleuropulmonary Blastomas 117
Takeshi Kusafuka, Seika Kuroda, Masahiro Inoue, Tasnim Ara, Akihiro Yoneda, Takaharu Oue, Yuko Udatsu, Yuko Osugi, and Akira Okada

Spindle Cell Lesions of the Head and Neck Mimicking Rhabdomyosarcoma in Children 129
Matthew W. Richardson, William K. Funkhouser, Brent Senior, and Brent W. Weston

Brief Reports

Nephrotoxicity Due to Intermediate-Dose Methotrexate Without Rescue in an Obese Adolescent with Acute Lymphoblastic Leukemia 135
Martin Sauer, Nancy Rydholm, John Piatkowski, Victor Lewis, and Marie Steiner

Pneumocystis carinii Pneumonia in a Girl with a Midbrain Glioma 141
Timothy R. Peters, Mark T. Jennings, and James E. Crowe

Volume 19, Issue 3

Review Article

Ovarian Granulosa Cell Tumors in Childhood 145
Laura Merras-Salmio, Kim Vettenranta, Merja Möttönen, and Markku Heikinheimo

Articles

Severe Iron Deficiency Anemia in 42 Pediatric Patients 157
Claudio Sandoval, Emily Berger, M. Fevzi Ozkaynak, Oya Tugal, and Somasundaram Jayabose

Chemo- and Radiosensitivity Testing in a Patient with Ataxia Telangiectasia and Hodgkin Disease 163
R. Y. J. Tamminga, W. V. Dolsma, J. A. Leeuw, and H. H. Kampinga

Prophylaxis with Urokinase in Pediatric Oncology Patients with Central Venous Catheters 173
Maria Kalmanti, John Germanakis, Eftichia Stiakaki, Cathrin Sfyridaki, Athanasia Christidou, Dimitris Tsetis, Panagiotis Vardas, and George Charisis

Mucosal Pathology of the Upper Gastrointestinal Tract Associated with Intensive Chemotherapy in Children: Vitamin A Supplements Do Not Prevent Lesions 181
Jorma Kokkonen, Merja Möttönen, Tuomo J. Karttunen, and Marjatta Lanning

Short Communication

Methadone and Neonatal Thrombocytosis 193
Óscar García-Algar, Lourdes Florensa Brichs, Eva Sánchez García, Dora Minoves Fábrega, Elisabet Esteban Torné, and Antonio Mur Sierra

Brief Reports

Paucity of Hematological Neoplasia after Treatment of Hodgkin Disease: Observation After Long-Term Follow-Up at Cancer Institute, Chennai, South India 197
T. G. Sagar, Anita Chandra, S. G. Raman, and R. Swaminathan

Encephalitis and Myocarditis in a Child with Acute Lymphoblastic Leukemia: Role of Coxsackievirus B5? 205
Maria A. Moschovi, Panagiota Sterpi, Sotiris Youroukos, and Fotini Tzortzatou-Stathopoulou

Volume 19, Issue 4

Review Article

Assessment of Peripheral Lymphadenopathies: Experience at a Pediatric Hematology–Oncology Department in Turkey 211
Abdullah Kumral, Nur Olgun, Kamer Mutafoğlu Uysal, Funda Çorapçıoğlu, Hale Ören, and Faik Sarialioğlu

Articles

Clinical Course of Children with Immune Thrombocytopenic Purpura Treated with Intravenous Immunoglobulin G or Megadose Methylprednisolone or Observed without Therapy 219
Feride Duru, Tunc Fisgin, Nese Yarali, and Abdurrahman Kara

The Comparison of Antibody Response to Different Hepatitis B Vaccines with and without pre-S2 Antigen in Children with Cancer 227
Suna Emir, Münevver Büyükpamukçu, Canan Akyüz, Tezer Kutluk, Elif Güler, and Kudret Çağlar

Short Communications

Neutrophil Hypersegmentation in Children with Iron Deficiency Anemia 235
Tansu Sipahi, Betül Tavil, and Yücel Ünver

Two cd34$^+$ Stem Cells from Umbilical Cord Blood Enrichment Methods 239
C. Pafumi, P. Bosco, A. Cavallaro, M. Farina, I. Leonardi, G. Pernicone, S. Bandiera, A. Russo, P. Giardina, M. Chiarenza, and A. E. Calogero

Brief Reports

Acute Suppurative Thyroiditis as a Rare Complication of Aggressive Chemotherapy in Children with Acute Myelogeneous Leukemia 247
Chihaya Imai, Toshio Kakihara, Akihiro Watanabe, Yukie Ikarashi, Hiromitsu Hotta, Atsushi Tanaka, and Makoto Uchiyama

BK Virus-Associated Fatal Renal Failure Following Late-Onset Hemorrhagic Cystitis in an Unrelated Bone Marrow Transplantation 255
Shotaro Iwamoto, Eiichi Azuma, Hiroki Hori, Masahiro Hirayama, Michihiro Kobayashi, Yoshihiro Komada, Hisashi Nishimori, Masazumi Miyahara, and Yoshiya Nishide

Polycythemia Vera in a 12-Year-Old Girl: A Case Report 263
Meral Turker, Esra Arun Ozer, Haldun Oniz, Berna Atabay, and Isin Yaprak

Second Transplant for a Thalassemia Patient After Graft Rejection: With Immunosuppression and Allogeneic Peripheral Blood Stem Cell 267
Chi Kong Li, Matthew Ming Kong Shing, Ki Wai Chik, Vincent Lee, Kam Sze Tsang, and Patrick Man Pan Yuen

Central Precocious Puberty in Multisystem Langerhans Cell Histiocytosis: A Case Report 273
G. Municchi, S. Mavroncini, A. D'Ambrosio, R. Berardi, and A. Acquaviva

Acute Lymphoblastic Leukemia Presenting as Cyclic Neutropenia 279
Jatinder S. Goraya, Verinderjit S. Virdi, Neelam Marwaha, Alka Khadwal, and Veena R. Parmar

Letter to the Editor

Coexistence of Sickle Cell Trait and Fanconi Anemia in a Child 283
Neşe Yaralı, Tunç Fışgın, Feride Duru, and Abdurrahman Kara

Volume 19, Issue 5

Note from the Editor

Research Design and Methods 287
Louise Parker

Annotation

Case-Control Versus Cohort Studies in the Investigation of Childhood Cancer 289
Claire L. Bell and Donna M. Hammal

Review Article

Radiotherapeutic Management of Intracranial Ependymoma 295
Arnold C. Paulino

Articles

Cutaneous Melanoma in Childhood and Adolescence 309
Merlin R. Hamre, Paul Chuba, Samee Bakhshi, Ron Thomas, and Richard K. Severson

Dextromethorphan is Effective in the Treatment of Subacute Methotrexate Neurotoxicity 319
Richard A. Drachtman, Peter D. Cole, Carla B. Golden, S. Jill James, Stepan Melnyk, Joseph Aisner, and Barton A. Kamen

Pulsed High-Dose Dexamethasone Therapy in Children with Chronic Idiopathic Thrombocytopenic Purpura 329
Yasser A. Wali, Zakia Al Lamki, Wasifuddin Shah, Mathew Zacharia, and Ahmad Hassan

Glutathione S-Transferase and P-Glycoprotein Expressions in Neuroblastoma 337
M. Tezer Kutluk, Ayşe Ayhan, Safiye Göğüş, Bilgehan Yalçin, Melda Çağlar, and Münevver Büyükpamukçu

Short Communication

Intracranial Manifestation of Osteosarcoma 347
S. Hettmer, G. Fleischhack, C. Hasan, T. Kral, B. Meyer, and U. Bode

Brief Reports

Differential Chemosensitivity in a Child with Congenital Relapsing Acute Lymphoblastic Leukemia 355
J. Styczynski, A. Koltan, O. Haus, and M. Wysocki

A Rare Case of Adenoviral Fulminant Hepatic Necrosis After Chemotherapy 361
Balveer Kaur, Nick G. Gottardo, Anthony D. Keil, Lavinia A. Hallam, and David L. Baker

Letter to the Editor

Treatment of Kasabach–Merritt Syndrome by Megadose Methylprednisolone 373
Şinasi Özsaylu

Volume 19, Issue 6

Annotation

Confounding and Bias in Epidemiological Investigations 375
Donna M. Hammal and Claire L. Bell

Center Presentation

Pediatric Oncology at Hospital Infantil de Mexico: Fifty-Five Years of Accomplishment 383
A. Medina-Sanson, A. Martínez-Avalos, S. Gallegos-Castorena, L. E. Juárez-Villegas, P. González-Montalvo, A. Perales-Arroyo, E. Gallegos-González, and M. T. Ayometzi-Ouchi

Articles

Type I Gaucher Disease in Children with and without Enzyme Therapy 389
Altoon Dweck, Ayala Abrahamov, Irith Hadas-Halpern, Tali Bdolach-Avram, Ari Zimran, and Deborah Elstein

The Synergistic Effect of Thrombopoietin in Erythropoiesis with Erythropoietin and/or IL-3 and Myelopoiesis with G-CSF or IL-3 from Umbilical Cord Blood Cells of Premature Neonates 399
Der-Cherng Liang, Lee-Yung Shih, I-Jen Chai, Tsung-Hsien Su, Shu-Huey Chen, Hsi-Che Liu, and Akihiro Shimosaka

Anti-D Exerts a very Early Response in Childhood Acute Idiopathic Thrombocytopenic Purpura 407
A. M. Moser, H. Shalev, and J. Kapelushnik

A Novel Missense Mutation in the DKC1 Gene in a Japanese Family with X-Linked Dyskeratosis Congenita 413
Hidefumi Hiramatsu, Tatsuya Fujii, Toshiyuki Kitoh, Machiko Sawada, Mitsuhiko Osaka, Kenichi Koami, Tamotsu Irino, Tomoko Miyajima, Masatoshi Ito, Taketoshi Sugiyama, and Takehiko Okuno

Brief Reports

Rare Tumors of the Lung in Children 421
Mehmet Kantar, Nazan Çetingül, Ali Veral, Savaş Kansoy, Coşkun Özcan, and Hüdaver Alper

The Association of Leukocyte Adhesion Defect Type I and Persistent Hyperinsulinemic Hypoglycemia of Infancy in a Saudi Arabian Family 429
Fawzi Suliaman and Mohammed Abdul Jabbar

Virus-Associated Immune Thrombocytopenic Purpura in Childhood 433
İdil Yenicesu, Sevgi Yetgin, Emel Özyürek, and Deniz Aslan

Successful Transplantation of Haploidentical $CD34^+$ Selected Bone Marrow Cells for an Infantile Case of Severe Combined Immunodeficiency with Aspergillus Pneumonia 439
Takao Yoshihara, Akira Morimoto, Shouhei Nakauchi, Noriko Fujii, Kentaro Tsunamoto, Akiko Misawa, Shigeyoshi Hibi, and Shinsaku Imashuku

Infantile Fibrosarcoma Associated with Urticaria Pigmentosa 445
Sameer Bakhshi, Süreyya Savaşan, and Esteban Abella

Errata 449

Volume 19, Issue 7

Charles Benton Pratt III (1930–2002) 451
Victor M. Santana and Gaston K. Rivera

Articles

Allogeneic Peripheral Blood Stem Cell Transplantation in β-Thalassemia 453
Jianpei Fang, Shaoling Huang, Chun Chen, Dunhua Zhou, Yanfeng Wu, and Rong Bao

Infiltrations of Epstein–Barr Virus-Carrying Cells in Granular Lymphocyte-Proliferative Disorders Corresponding to Chronic Active Epstein–Barr Virus Infection 459
Tomoki Takechi, Akihiko Maeda, Hiroaki Hisakawa, Hiroshi Wakiguchi, Tamotsu Takeuchi, Hiroshi Sonobe, and Yuji Ohtsuki

Plasma Levels of the Von Willebrand Factor-Cleaving Protease in Physiological and Pathological Conditions in Children 467
Kaan Kavakli, Maria Teresa Canciani, and Pier Mannuccio Mannucci

Treatment Results of Osteosarcoma of the Extremity in Children and Adolescents at Ege University Hospital 475
Mehmet Kantar, Nazan Çetingül, Sertaç Azarsız, Savaş Kansoy, Dündar Sabah, Ayşenur Memiş, Gülçin Başdemir, and Zeynep Burak

Variability in Dose Intensity of High-Dose Methotrexate for Nonmetastatic Osteosarcoma 483
Patrick J. Leavey, Elpis Mantadakis, and Gerhard Maale

Splenic Function in Omani Children with Sickle Cell Disease: Correlation with Severity Index, Hemoglobin Phenotype, Iron Status, and α-Thalassemia Trait 491
Yasser A. Wali, Zakia Al-Lamki, Samir S. Hussein, Hadia Bererhi, Dilip Kumar, Shah Wasifuddin, Mathew Zachariah, and Kanjaksha Ghosh

Ganglioneuroma: Radiological and Metabolic Features in 4 Children 501
Sascha Meyer, Harald Reinhard, Karin Ziegler, Sven Gottschling, Schahin Aliani, Thomas Krenn, and Norbert Graf

Transgenic IL-2 Expression in Ewing Tumor Cell Lines after Transfection with Starburst Dendrimers and Cationic Liposomes 509
Birgit Ackermann, Barbara C. Engel, Barbara Buttlies, Andree Zibert, and Stefan Burdach

Short Communication

Acute Lymphoblastic Leukemia and Hepatoblastoma in a Family 521
Khadijeh Arjmandi Rafsanjani and Parvaneh Vossough

Brief Report

Intermittent 20q- and Consistent i(7q) in a Patient with Shwachman–Diamond Syndrome 525
Arabella Smith, Peter J. Shaw, Boyd Webster, Ahti Lammi, Kevin Gaskin, Sara Diaz, and Praveen Sharma

Letter to the Editor

Traumatic Optic Neuropathy Complicating Combined Idiopathic Thrombocytopenia and Neutropenia 529
S. De and N. J. Gilbertson

Volume 19, Issue 8

Articles

Presence of Prolonged Dispersion of QT Intervals in Late Survivors of Childhood Anthracycline Therapy 533
Monesha Gupta, Howard T. Thaler, and Laurel Steinherz

Investigation of TT Virus in the Etiology of Pediatric Acute Lymphoblastic Leukemia 543
Bruce Shiramizu, Qigui Yu, Nigjie Hu, Richard Yanagihara, and Vivek R. Nerurkar

The Efficacy of Heparinization in Prolonging Patency of Arterial and Central Venous Catheters in Children: A Randomized Double-Blind Trial 553
M. de Neef, H. Heijboer, J. B. M. van Woensel, and R. J. de Haan

Endogenous Pro-Inflammatory Cytokines in Children and Adolescents During Chemotherapy-Induced Neutropenia 561
U. Banning, C. Mauz-Körholz, Q. Muhammad, A. Kösser, A. E. Müller, U. Tunn, K. Rieske, H. Bönig, and D. Körholz

Short Communication

Red Blood Cell Indexes in Patients with Hereditary Spherocytosis and β-Thalassemia Combination 569
Nejat Akar and Hafize Gökçe

Brief Reports

Centrofacical Malignant T-Cell Lymphoma Exhibiting Recurrent Fever and Skin Ulcer in a 3-Year-Old Girl 575
Toshio Kakihara, Chihaya Imai, Hiromitsu Hotta, Yukie Ikarashi, Atsushi Tanaka, and Makoto Uchiyama

Hematological Abnormalities in Inborn Errors of Metabolism—How Frequent are They? The Cretan Experience 581
Athanasios Evangeliou, Eugene Dafnis, Chrisoula Perdikoyanni, Martha Spilioti, Christos Lionis, and Maria Kalmanti

Incidental Diagnosis and Tempestive Therapy in a Case of Neonatal Alloimmune Thrombocytopenia Due to Anti-HPA-5b 587
Antonio Alberto Zuppa, Francesco Cota, Daniele De Luca, Federica Visintini, Pier Luigi De Turris, and Giuseppe Tortorolo

High Levels of FVIII and FIX in a Pediatric Patient with Retinal Artery Occlusion 593
Nejat Akar and Hafize Gökçe

Bilateral Exophthalmus Due to Retro-Orbital Chloromas in a Boy with t(8;21)-Positive Acute Myeloblastic Leukemia 597
H. Bönig, U. Göbel, and W. Nürnberger

Letter to the Editor

Antithrombin III Supplementation In Childhood Acute Lymphoblastic Leukemia Treated with L-Asparaginase 601
Akinobu Matsuzaki, Aiko Suminoe, and Toshiro Hara

Title Page for Volume 19

Contents for Volume 19

Author Index for Volume 19